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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,796	10/01/2003	Hiroki Tawa	107348-00372	4154

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EXAMINER

WRIGHT, ANDREW D

ART UNIT	PAPER NUMBER
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3617

DATE MAILED: 11/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/674,796

Applicant(s)

TAWA ET AL.

Examiner

Andrew Wright

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 September 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4 and 5 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2, 4, and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 2 recites "a branching part of the cooling water passages". It is unclear if the recitation "a branching part" refers to the "pair of left and right cooling water passages branching from..." already recited in claim 1, or if the recitation refers to a different structural element. It is unclear if the recitation "the cooling water passages" refers only to the "pair of left and right cooling water passages branching from...", or to both the "pair of left and right cooling water passages branching from..." and the "cooling water passage for supplying cooling water...". Claims 4 and 5 have similar recitations and are unclear for the same reasons. It will be assumed for examination that the recitations refer to the already recited pair of left and right passages.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (US 6,155,895) in view of Kunze et al. (US 6,595,164) and Okada et al. (US 5,497,734). Sato shows a water cooled engine with vertical crankshaft, connecting rods, pistons, cylinders, cylinder block, cylinder head, combustion chambers, cylinder block water jacket, cylinder head water jacket and cooling water pump. Such is well known and common in the art. Sato discloses that the pump supplies water to the exhaust manifold, then to cylinder block jacket, then to the cylinder head jacket (column 9, lines 40-67, and fig 9). The cooling water passes from the block jacket to the head jacket via gasket faces of the block and head. Sato does not disclose left and right branches from a block jacket supply passage that communicate with the cylinder head jacket via gasket faces of the block and head. Kunze shows a cooling system for an internal combustion engine. Kunze demonstrates the equivalence of serial and parallel flow between the head jacket and block jacket (figs 1-2). Kunze does not disclose the plumbing of how the parallel flow is achieved. Okada shows a water cooled engine with parallel flow between the head jacket and the block jacket. Okada discloses that the pump supplies cooling water to the bank center. The bank center is a supply passage for the block jackets. Left and right branches branch off of the bank center to supply cooling water to the head jackets. Okada shows (figs 2-3) that the inlets of the head jackets are at the block-head interface. Okada teaches that parallel flow of the block jackets and head jackets provides improved cooling. Based upon the suggestion of improvement of Okada and the teaching of equivalence of Kunze, it would have been obvious to one having ordinary skill in the art at the time the invention was made to

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modify Sato by using parallel instead of serial flow between the head and block jackets.

The motivation would be to improve the cooling characteristics of the engine. Okada shows left and right branches from a block jacket supply passage that communicate with the cylinder head jacket via gasket faces of the block and head.

6. Claim 2, Okada shows that the branch passages are formed within the block.

#### ***Allowable Subject Matter***

7. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

8. Applicant's arguments filed 9/1/04, with respect to the rejection(s) of claim(s) 1, 2, 4, and 5 under 35 U.S.C. 103(a) as being unpatentable over Yonezawa (US 6,715,454) in view of Watanabe et al. (US 4,684,351) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made.

#### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Morita et al. ('705) demonstrates the equivalence of serial and parallel flow between the head and block jackets (figs 1, 4, and 5). Nanami et al. ('121)

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suggests the equivalence of serial and parallel flow between the head and block jackets (column 6, lines 10-15). Batzill (US 2002/0189558) shows an engine with parallel flow between the head jacket and the block jacket.

10. Any inquiry concerning this communication should be directed to examiner Andrew D. Wright at telephone number (703) 308-6841. The examiner can normally be reached Monday-Friday from 9:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, S. Joe Morano, can be reached at (703) 308-0230. The fax number for official communications is 703-872-9306. The fax number directly to the examiner for unofficial communications is 703-746-3548.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Andrew D. Wright  
Patent Examiner  
Art Unit 3617

*AW 11/17/04*  
**ANDREW D. WRIGHT**  
**PRIMARY EXAMINER**